

THE ADMINISTRATION OF NATURAL RESOURCES



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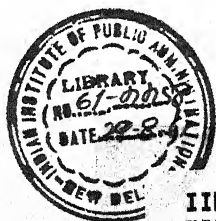
THE ADMINISTRATION OF NATURAL RESOURCES

The American Experience

by

NORMAN WENGERT

*Issued under the auspices of
The Indian Institute of Public Administration
New Delhi*



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FOREWORD

THE deliberate and conscious planned development of the resources of a country is mainly a twentieth century phenomenon; and, in the developing countries of South-East Asia, it is an even more recent phenomenon, as it is only during the last two decades or so that the problem of resource development has attracted attention in them on a national scale. In the three lectures contained in this monograph Prof. Wengert succinctly traces the origins and historic perspectives of the problem as it arose in the advanced countries of the West and the new types of administrative machinery, policies and practices which it gave rise to, particularly in the United States. This American experience was pragmatic and pluralistic and deeply involved in political considerations. Further, the American resources programmes have been administered by specialists and technicians, rather than by administrative generalists, and their dominant objective has been programme accomplishment. Prof. Wengert also emphasises that in a democratic set-up all important decisions about resource development must eventually be political in character, and the concept of public interest, though elusive, must constantly be kept in mind in terms of the impact and the consequences of govern-

mental policies and actions on the national society and economy. All this has its lessons for other countries as well.

I hope that these lectures will be of special interest to our readers inasmuch as they provide insights into the socio-economic and political background of problems relating to the administration of natural resources—problems which are all the more important in the context of our Five Year Plans.

V.K.N. MENON

Director

*The Indian Institute of
Public Administration
April 26, 1961*

PREFACE

STUDIES of Public Administration in the United States may conveniently be grouped into two categories; those concerned with service activities including personnel, purchasing, budgeting and auditing, and those concerned with programmed administration in which particular attention is directed to the realization of substantive programme goals.

These lectures represent the second category of studies. They illustrate the intimate relationship between politics and administration and the extent to which programme decisions involve the bureaucracy in the political struggle.

The professionalization of public administration in the United States is often dated from the well-known essay by Woodrow Wilson, written in 1887, a major theme of which was the separation of politics from administration. For more than three decades after Wilson wrote, this dichotomy was accepted and taught as crucial to an effective and viable career service. And it is still accepted as an operational premise in some circles.

But the expansion of government activities in the New Deal period after 1933 and the complex problems of World War II and the post-war decade have made it quite clear that the bureaucrat—the civil

servant—has in fact been deeply involved in the political process, with a great deal of power to shape what government does and how it does it.

This involvement of civil servants in the determination of programme goals and objectives first became extensive in connection with governmental conservation and natural resources activities. The so-called "Conservation Movement," which was initiated by President Theodore Roosevelt (1901-1909), was largely the creation of imaginative government scientists, technicians and administrators. It represented, moreover, a significant break with 19th Century *laissez-faire* economic policies, urging positive intervention of government to conserve and develop natural resources.

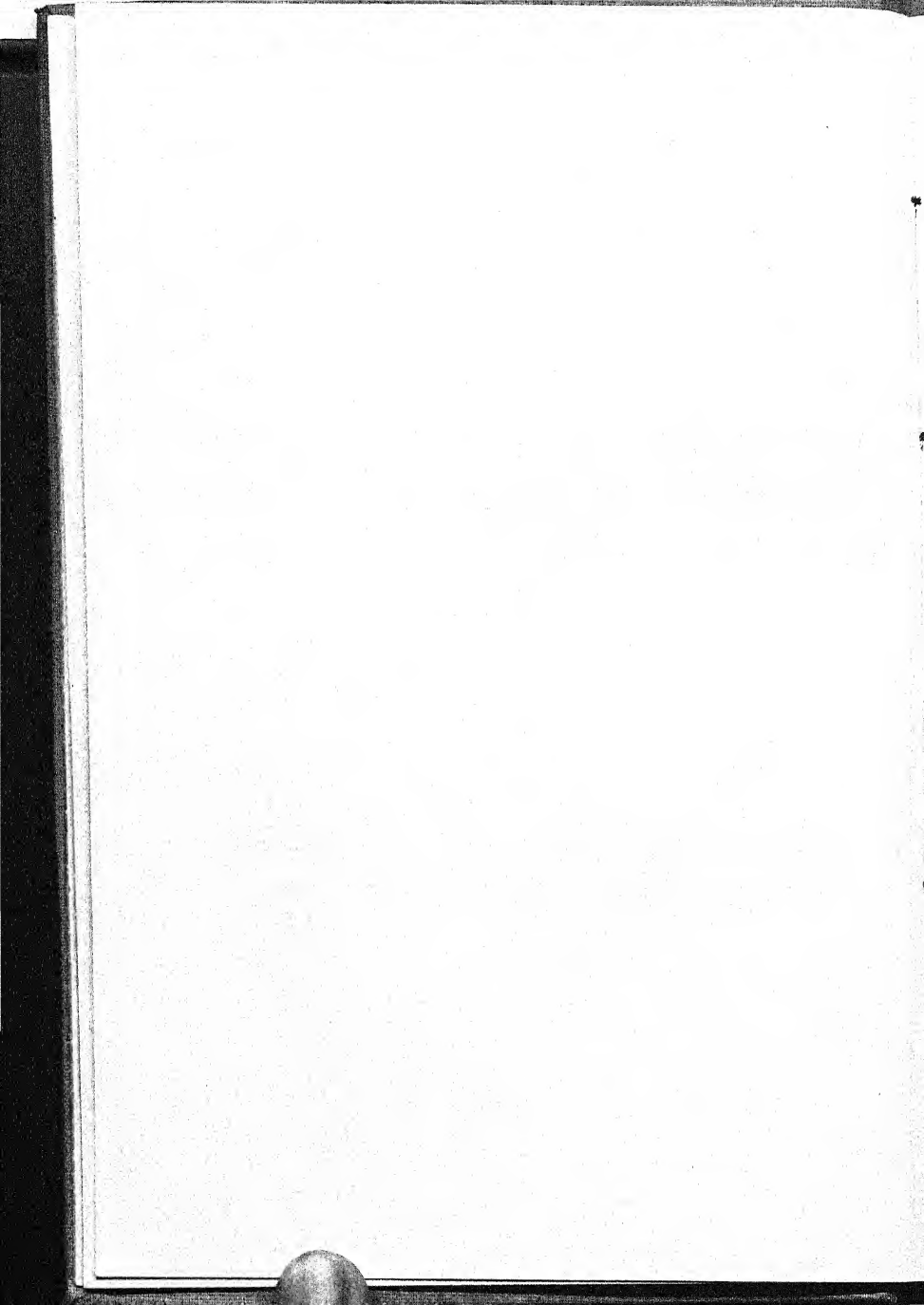
At that time, even as still today, general economic planning would not have been accepted. And while it is still looked on with suspicion in the United States, governmental resource development programmes—which in fact involve government planning and intervention in the economy—are accepted as appropriate governmental activities.

These lectures seek to present a brief review of American experience in this substantive policy area. They present a picture of the administrative process in a significant programme area. If they provide some insight into the way in which programme decisions are made and how programmes are developed in the United States, they will have served a useful purpose.

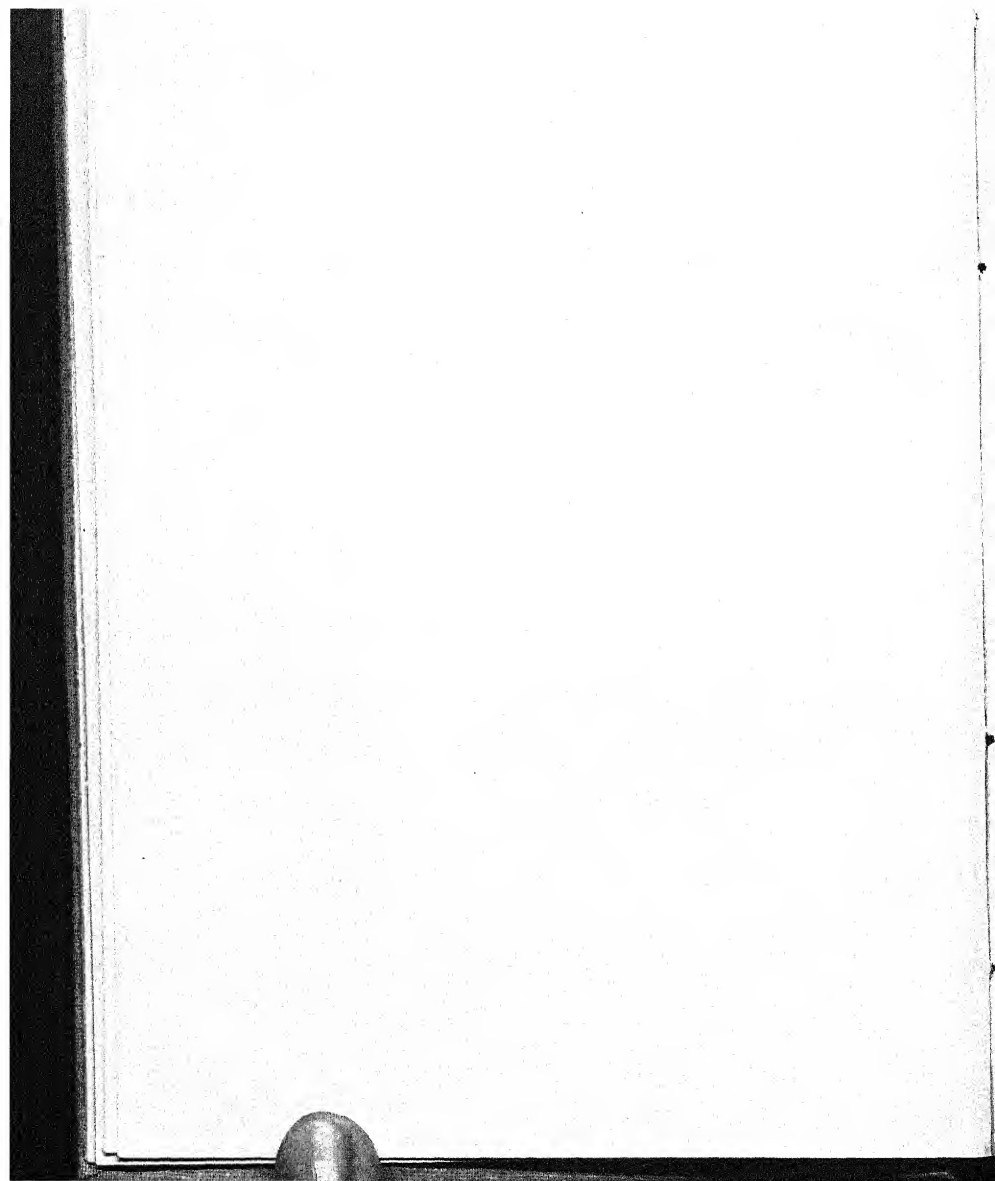
NORMAN WENGERT

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THE ADMINISTRATION OF NATURAL
RESOURCES



I

RESOURCES IN A NATION'S ECONOMY

TO MANY OF YOU, the term "natural resources" may seem somewhat unfamiliar. In many countries, natural resources are not singled out for special treatment but are dealt with in the broader context of economic development. In the U.S.A., however, greater stress is placed upon the resources as such, and upon their development rather than upon economic development in general. In part, our approach reflects our nationality; it would be strange if it did not. But beyond that I think there may be some advantage in stressing natural resources programmes and their administration apart from general economic development. That the two concepts are closely related is obvious from the title of this first lecture, and will be even more apparent as I move into my discussion.

When I speak of governmental natural resources programmes, I mean those programmes which deal specifically with particular resources such as water development programmes, soil conservation programmes, forestry programmes, minerals programmes, wild life and fishery programmes, and so forth. Such programmes are sometimes designated "conservation" programmes, but I prefer to use the term natural resources because of confusion over the meaning of conservation.

One other point needs clarification before I move ahead. This is the combination, in the title of this series, of "Administration" with "Resources". Herein lies one of my major premises, and I hope that when I have completed my discussions you will perceive its validity. The premise is that the administration of natural resources is something distinct and unique. The administrative problems associated with natural resources are sufficiently different from governmental problems in general to warrant special study and a particularized approach. In short, I believe that the administration of natural resources is a logical sub-classification of the genus, public administration, and that for this reason can be studied separately to advantage. I hope that you will agree with me at the end of my talks, for implicit in my analysis is a somewhat hidden issue, namely, whether we as students and teachers of public administration have over-generalized our subject-matter. Have we assumed uniformities which are really only superficial? In the face of today's tremendous range of governmental activities, might not an approach which took programme content into greater account be more logical and appropriate to the discharge of the public business? These questions are implicit in much that I will be saying. Perhaps, my comments will suggest some tentative answers.

HISTORIC PERSPECTIVES

Resources have always been important to a nation's

growth and development. But public attitudes towards resources have not always been the same.

In primitive societies, resources were generally taken for granted or regarded as gifts of the gods. Moreover, in such societies the skills of converting resources into usable goods were generally so inadequate (as measured today in hind-sight) that life and living tended to be on the very border of subsistence. In this situation it was easy to bless or blame the gods (as the case might have been) for resource bounty or scarcity. Today, in the democracies at least, we tend to bless or blame the party in power; and the reasons for this shift are worth keeping in mind. In any case, it is clear that primitive societies had no discernible resource policies. The concept is quite modern.

Even at the beginning of the modern era, the approach to resources was considerably different from that which prevails today. It was largely a static view and was in this respect quite akin to that of the primitives, except that the gods were not blamed when a nation did not possess great natural wealth, nor were they blessed when the opposite condition prevailed. Partly for this reason, early public policy was not concerned to any great extent with resource *use*, with issues of what happened to a nation's resources. In these early attitudes, variants of which were widely held throughout Europe, the wealth of a nation was not measured by production, by the possibility of converting natural resources into vendible and usable goods, but by a sterile and static concept of wealth. The

standard was, figuratively, how much gold and silver a nation had buried in its back-yard. In passing, it might be noted that we in the United States have a kind of cultural lag in this respect as represented by our hoard of bullion buried in underground vaults at Fort Knox, Kentucky.

The prelude to the modern era with respect to natural resources and economic development is marked by two familiar events. And I should add that I am telescoping a great deal of world history and oversimplifying some very complex trends and developments. Yet I believe that this kind of a backward look helps us to see where we have come from, where we are, and perhaps where we are going. The two events that I have selected as symbolizing the beginnings of a newer attitude with respect to natural resources were: Adam Smith's *The Wealth of Nations* and the almost contemporaneous initiation of the industrial revolution. The one provided the theoretical and analytical basis for a dynamic, growing economy; the other provided the means for such growth.

To begin with, however, both of these events had the effect of postponing the day when natural resources questions would be dealt with in a comprehensive way by government. The *laissez faire* environment of the Nineteenth Century which followed generally took natural resources questions outside the sphere of public policy and hence of public administration. Development was considered to be a private matter, and in a few cases the shift in this direction was considerable, as when in parts

of Germany the century-old forestry policy was abandoned to permit extensive lumbering and even forest destruction.

The point is not that resources became less important in the Nineteenth Century, for it is obvious that as industrialization advanced, resources became ever more significant and the definition of what were resources became ever more inclusive as more and more new materials came to be used by industry. The point is merely that in most Western countries—and these were the industrializing countries—the public or governmental interest in resources was not recognized. Resources, in the prevailing view, were there for exploitation by private capital. They were there to provide the basis for private fortunes.

These attitudes were particularly prevalent in Britain and the United States. But they were also to be found in other industrializing nations. And, of course, these views were at the heart of Nineteenth Century colonialism.

EARLY GOVERNMENTAL RESOURCE INTERESTS

But the pattern of policy was not uniform. Public policy rarely is so consistent. Thus there were exceptions in all industrialized countries—cases where government policy did deal explicitly with resources, their use and development. And it is worthwhile to glance at some of these exceptions, for they well illustrate the ever-changing patterns of

social and political processes. Time periods and trends, distinct eras and clearly identified movements, are largely the invention of historians and social analysts looking backwards. The web of history is continuous. Events of today have their roots in the day before yesterday. And it is well at times to remind ourselves of this to avoid an oversimplification of tremendous social processes.

To Germany, Russia and Japan, industrialization came late in the Nineteenth Century, and governmental intervention in economic development occurred in these countries in different ways. The processes of economic growth were never so free as in Britain and America, but it should be added that the interest in resources was in most cases still only indirect. Public policy was not in most cases focussed specifically upon natural resources, their use and development, although clearly the encouragement given to industrialization had effects upon resources.

Among these effects was the tremendous surge of imperialism and the struggle for colonies, especially in Africa, in the eighties and the nineties. But here too, while there was considerable emphasis upon access to resources (the "have and have-not" problem of more recent times), a great deal of the colonial struggle was based upon stark issues of power and prestige, together with rather narrow desires for investment and trade outlets. So even in this case, the issue of natural resources was seldom clearly identified.

Various kinds of tariff protection, which were to

be found in virtually all countries, represented a kind of public policy with respect to resources. Certainly tariffs had a considerable effect upon patterns of resources use and development. One of the more obvious examples, of course, was the various tariff devices favouring domestic agricultural production—of which sugar beets in Germany is an excellent example. But here again, the primary concern was not with resources but with other values, and the impact upon resources was often ignored or only given secondary consideration. By way of an aside, it might be pointed out that one reason for this was that both the data and the analytical techniques of the times were probably not adequate to permit effective consideration of national economic questions.

Perhaps the most significant development at the end of the Nineteenth Century, which tended to bring resources questions to the fore, was the growing militarism and the armaments race that ultimately led to World War I. As war and the preparation for it became increasingly technological, war planners, such as the German General Staff, had to be concerned with the resources base for their military technology. And indeed, this concern has marked all wars since then. The ballad about a kingdom being lost for want of horse shoe-nail is all too true in modern warfare.

One other Nineteenth Century instance can be cited to illustrate the point that while the dominant attitude left resource questions in the private sector, yet public policy was being developed with respect to

particular resources and resource problems. This instance is the case of public domain or public land policy in the United States. I shall discuss this somewhat more fully in the second lecture, but I want to stress here that while *laissez faire* attitudes were dominant in America, at the same time public policy-makers were forced to make a host of decisions to determine numerous policies which ultimately had great significance for the administration of natural resources in America and for national economic growth. The significant thing is that government *had* to deal with the land question. It had to decide what to do with over one billion acres of public lands, and in the process, especially at the end of the Century, resources issues kept obtruding, sometimes in very bald terms.

But despite these Nineteenth Century instances, where governments took action which materially affected natural resources, it seems clear that by and large deliberate, conscious resources policies are a Twentieth Century product. Again I would emphasize that, of course, all economic activity involves resources allocation and use. Hence all government policies which govern or affect economic activity might in one sense be considered resources policies. And the economist would probably thus consider them. But to the political scientist and student of public administration, it is appropriate to label certain policies as resources policies at that point where there is a deliberate and conscious concern for the supply, and use and development of particular resources. It is when policy-makers

and administrators begin to focus their attention on such questions as water supply, industrial raw materials, forest and soil conservation, and the relationship of these resources to national welfare and growth, and when they begin to develop programmes and policies dealing with these resources, that we can speak of natural resources policies, analyze and study these policies, and consider administrative problems connected with them.

FORCES RAISING RESOURCE ISSUES

It has been especially in the Twentieth Century that numerous factors and forces have converged to raise natural resources issues for public consideration. And I want to review some of these factors and forces before considering the specific questions of administration which this growing concern with resources have posed.

One of the main forces that brought resources questions to the fore, I have already referred to. This was the increasing pace of industrialization. Several points are worth noting. The sheer number of industrial establishments increased substantially year by year as more and more nations industrialized. But the growth was also one of quality with the result that year by year, industry also required a growing variety of raw materials. One need but mention the rare metals that go into an earth satellite rocket to suggest the great variety of resources which are today needed to sustain industrial activity. Even at a less dramatic level, the wide

range of resources necessary for modern farming stagger the imagination of the cultivators familiar only with traditional methods. Industrialization has thus increased both the variety and the quantity of resources consumed. Implicit in this situation, no doubt, are critical questions of resource supply, and of resource allocation and use.

Another factor that has focussed public attention upon resources questions may be broadly labelled the *Malthusian* problem—the problem of insufficiency of resources. Several aspects of this problem are worth noting. First is the classical Malthusian problem of population growth outrunning food supply. Through much of the Nineteenth Century, the opening of new lands in the Western hemisphere, in Africa, New Zealand and Australia, seemed to allay the concern for food enough in many parts of the world. But in the nineties, this concern was again being voiced, one of the more extreme instances being the prediction of Sir William Crookes, the eminent British physicist, that the world would face a wheat famine in 1931. His prediction followed the very bad European crop year of 1897 and was based upon the then prevailing view that the principal way of increasing agricultural production was by expanding the acreage under cultivation. It is only in the last thirty years or so that the world has come to realize the tremendous possibilities of increasing food production from existing acres. Herein, incidentally, lies the hope for India and also the key to America's agricultural surplus problems.

But there has also been a more sophisticated aspect

of the Malthusian problem. This is the issue of resources depletion. In this vein it has frequently been calculated that at present rates of consumption, world petroleum resources will be depleted in 100 or 200 years; iron ore in a similarly short span of time; and while coal will seemingly last somewhat longer when measured by the span of world history, this resource, too, appears very limited. The picture can become very gloomy indeed if one considers the growing demands for resource consuming products from the millions of people living in the less developed parts of the world. With improved statistical techniques, moreover, one can get astronomical consumption or demand figures, so that the issue of sufficiency of resources becomes dramatically pressing. Whether these Cassandra-like views are sound, I am not certain; but that they have contributed to a world-wide interest in resource policies is beyond doubt.

Another factor, which has drawn increasing attention to resource questions, has been the very growth of science and technology. In some respects this growth has intensified the Malthusian problems of insufficiency of resources, but in other respects it is science and technology that seems to promise a solution to the problem of resources supply. To be sure, it has been science and technology that brought about the tremendous increase in the demand for resources, both in absolute quantity and in variety. But it is science and technology that also has tremendously expanded the resources base. Atomic energy is a dramatic example, but

there are many others. Researchers working on titanium have stated that this metal is at about the stage of development of aluminium 60 years ago. They add, moreover, that it is just a matter of time that the production problems of titanium will be solved. When this occurs, the world will have a metal with the strength of steel and the weight of aluminium—a metal, that is plentiful in the earth's crust. In the field of iron ore itself, the last twenty years have seen developments which permit the economic use of low grade ores that once were thought worthless—for example, the taconite ores of Minnesota.

Equally important, it seems to me, is the impact which science and technology has had on popular attitudes with respect to resources. Where in a pre-science and pre-technological age man was more or less forced to accept his lot, the era of science holds out the hope that man can change, and can improve his condition. Through the application of his intellect, man can alter his environment; he can draw upon an ever wider range of resources, including even the rich reserves of the oceans, from which we already extract magnesium as well as various common salts. Against the pessimism and gloom of the neo-Malthusians one can place the cornucopian enthusiasm of the scientists and technologists. But whichever view-point one chooses to adopt the importance of natural resources and what man does about them is inescapably a primary issue.

Another important factor in bringing resource policy issues to the fore in the recent past has been

the spread of democracy and political and social changes related thereto. One of these is the spread of mass education. Another is the growing hope for improvements in living standards. Even autocratic governments must today be concerned with the welfare of the people, and although they may postpone some welfare decisions and set development priorities which would not be possible in a democratic society, they cannot ignore the issues of living standards. And in the democracies, the people themselves are greatly concerned with the realization of better living and their representatives ignore this at their peril. One is reminded of the French politician who glanced out of the window to see a mob go by and then exclaimed: "Those are my people; I am their leader; I must follow them!"

But living standards depend upon resource use and economic development so that as these popular pressures have been generated, governments have had more and more to be concerned with natural resources policies and programmes.

Still another related factor deserves mention as contributing to the growing interest in resources questions. This factor is that of economic crises and related changes in widely held economic concepts. In Western countries, the economic depression of the early 1930's and the attendant unemployment highlighted issues of resource use that previous prosperity and dominant economic philosophy had largely obscured. These economic conditions created a new interest in socialist economic theory and, indeed, the Russian Communist system with its

emphasis on economic planning could not be ignored. But perhaps more important in Britain and America was the revolution in economic thought and attitudes instigated by the seminal writings of John Maynard Keynes.

To me as a political scientist, the significance of Keynesian economics lies in its recognition of the role of government in economic development and of the importance of investment to economic growth. Undoubtedly, Keynesian ideas were ultimately acceptable in the United States because the experience of World War II itself, when the American economy expanded at a very rapid rate, seemed a kind of general proof of what government could do. Hence, when the fear of a post-war slump dominated political thinking in 1944 and in 1945, it was assumed almost without challenge that government would be used to prevent economic decline. On the positive side, both in Britain and America the development of atomic resources was appropriately considered as requiring government leadership.

Finally, the post-war world situation generated a great deal of concern over resources problems. The devastation of the war required large and dramatic reconstruction measures. The fear of economic difficulties and unemployment were a part of the picture. For some, the propaganda of the victors with respect to the four freedoms, and especially freedom from hunger, raised issues of resource development. Moreover, as a part of the war's aftermath, people of underdeveloped nations became articulate and demanded improvement in

their conditions, with the result that economic development became a major post-war theme. And to such a development, clearly, natural resources, their use and development were crucial.

ADMINISTRATIVE CONSEQUENCES

My review of the social, political and economic forces and factors which converged to bring natural resources policy questions increasingly to the attention of governments the world over has admittedly been hurried and superficial. But I have tried to give you this overview because I believe that public administration should be studied in the context of environment, against the background of events and conditions from which the policies emerged that are the responsibilities of administrators. This approach is what my mentor, Professor John M. Gaus of Harvard University, has aptly named the Ecology of Administration. And I hope that my rapid survey may have proved interesting and even stimulating to you. Against this background, I will now consider some of the consequences for public administration flowing from the events and developments I have so briefly sketched.

The first consequence for administration which I want to consider is a general one. It is that administration of economic development—and even more specifically administration of natural resources programme—has become a special field of administration, requiring special skills, special knowledge, and special training. More than that, I would argue

that administration of natural resources creates special kinds of administrative problems that demand special kinds of solutions. For these reasons too, I would argue that the administration of natural resources is a special field for research and study.

In many countries and to many persons who are in public employment and to many teachers, public administration is a universal art or science applicable equally to post offices, public housing, shipyards, atomic installations, and to whatever else government happens to be doing. From this kind of premises we have developed our various classes of administrative generalists; we have shaped our college and university programmes in public administration; and we have provided or sought to provide career ladders that permitted or even encouraged administrators to shift from one agency and programme to another. I am quite certain that fifty or more years ago, when the scope of governmental activities was quite limited, these views were valid and provided a sound base on which to build an effective public service. But I am not at all certain that these views are still sound today.

To be sure, sweeping a floor in an atomic energy agency is little different from sweeping a floor in the post office. But public administration is more than merely housekeeping.

In America, where the private sector has often set the standards of good management, it is rare for a man with middle management experience in the chemical industry to shift to management in the auto industry or to electronics. Instead careers

tend to be based on a knowledge of subject-matter. And it seems to me that for similar reasons the administration of public programmes in fields like natural resources demands similar specialization. If my conclusions are sound, then it follows that we will fail to do our job of training and of research, if we do not recognize the unique aspects of administration of particular programme. And while this comment applies to many of the diverse and specialized activities of government today, I am convinced that it applies particularly to the administration of natural resources programmes. In summary, then, it seems to me that the need for a concept of specialized programme administration emerges from the complex factors and forces which have brought resources question to the forefront of public policy. I think it also follows from an examination of the more specific impact that natural resources programmes have had on government: more particularly the need for new types of government agencies; the new types of personnel problems; the new types of budget and accounting problems; new types of management problems; and new types of political problems and relationships. On each of these I want to comment in detail, leaving the last one for my third lecture on "The Political Background of Resources Administration".

THE NEED FOR NEW TYPES OF GOVERNMENT AGENCIES

As governmental interest in natural resources has grown, a whole set of new and different agencies have

been created to handle these responsibilities. In some cases, the newness lay primarily in the functions undertaken. An illustration of this would be establishment of a geological survey or the development of a soil conservation agency. In other cases, natural resources programmes have required not only new functions but also new kinds of governmental institutions. Perhaps the most dramatic illustration of a new type of governmental organization is the valley development agency like India's Damodar Valley Corporation or America's antecedent Tennessee Valley Authority.

Less dramatic have been the type of agencies established in some countries to *finance* resource development activities of different kinds. Among international agencies, the International Bank for Reconstruction and Development illustrates a new type of financial institution. Although not focussed solely on resource development, the various national and international technical assistance agencies represent, in part at least, the development of special kinds of agencies with a resources focus. In countries having atomic energy programmes, a special agency for this purpose is the common pattern. In the United States this agency is unique both in structure and in the powers it possesses, and in its relations with the national legislature.

To give just one more example in the field of organization, in many countries the problems of resource development have given rise to the establishment of a variety of planning and economic analysis agencies which engage in resource appraisals

and surveys of resource potentials as well as in preparation of economic plans with differing degrees of detail.

Let me summarize this point : as government interests extended to problems of natural resources, new forms of organization were developed to meet the needs of the situation. It seems clear, moreover, that further experimentation and further improvization can be expected in this field. Hence, students of administration need to come to grips with the special organizational problems and needs in the field of natural resources so that they can make the fullest contribution to decisions in this area of public administration.

NEW TYPES OF PERSONNEL PROBLEMS

Turning now to the new types of personnel problems which have resulted from the growing attention of government to natural resources, I would like to give greatest emphasis to the problem of recruiting technicians, scientists, and other technically trained personnel. In many cases and for many reasons governmental recruitment systems have not been geared to attracting enough technicians or technicians with the level of competence needed. Especially where the government services have tended to attract the generally trained arts graduates, drastic changes have been necessary to bring technicians into government service.

The problem is not only one of recruitment. It involves conditions of work, salary levels, promotion

and career opportunities, etc. In the United States, for example, where our economy has been booming, government employment has often been considered much less attractive to the young scientist or engineer than employment with private industry with the result that some public personnel people state that government tends to get second and third raters.

Another significant impact on public personnel is in the field of training, for as governments take on more and more responsibility with respect to natural resources programme, the need for training and the content of training programmes changes. Where agencies are staffed largely with technical personnel, these should often be given special training to equip them to deal with governmental problems. Skills in public administration must be grafted to their skills in technical fields. Conversely, the non-technical administrative personnel dealing with resources programmes must be given an understanding of the technical aspects of the agency programme. Finally, with technology changing so rapidly, opportunities must often be provided for keeping staff members up to date in the field of their responsibility. (I might add, that I have been greatly impressed with the variety and scope of the training effort that India is undertaking in connection with its development programme.)

NEW TYPES OF BUDGET AND ACCOUNTING PROBLEMS

With respect to budgeting and accounting, or more broadly fiscal problems, as governments take

greater interest in natural resources problems, new situations arise which must be dealt with in novel ways. One of these concerns the difficult problem of how to handle developmental financing. This is too complex a subject to explore in detail, but it obviously raises questions of both budgeting and accounting. Some of the questions that are relevant are : Where development occurs over a span of years, should costs be allocated to one or to all of the years? How should income be handled, if there is any? How should losses be treated? An aspect of resource development financing that is attracting both practical and theoretical attention in the United States is identified as the "cost-benefit" problem. Simply stated, cost-benefit formulas provide that the costs of development should not exceed the benefits from development. Another way of stating this principle is that inputs should not be greater than outputs. But how are inputs measured? How are costs determined? More difficult, perhaps, are the questions of measuring benefits or outputs, for many developmental projects have social benefits not measurable in monetary terms. Or, in other cases the benefits, though monetary, are statistically not determinable. What are the benefits of a good road? How does one measure the benefits from a safe water supply?

Another area of fiscal problems for which traditional approaches are often inadequate is auditing of developmental programme. Somehow government auditors have difficulty in distinguishing between defalcations and fraud on the one hand and

administrative misjudgments on the other. With respect to the latter, it is often the case that those in charge of developmental programme must tread new ground and hence the margin for error should be enlarged. Development by definition often requires the taking of a calculated risk. Yet there is a tendency for governmental accounting and auditing procedures to penalize administrators who take such risks. The result can be to stifle development before it gets started or to impede effective action by yards and yards of red tape.

Finally, in the field of budgeting I want to refer to a fairly recent trend in the United States which was given considerable impetus by governmental resource activities. I refer to what is called programme budgeting or performance budgeting. The major characteristic of this approach to budgeting is that budget and appropriation decisions are based upon what the agency hopes to accomplish—its programme—rather than on a more-or-less meaningless list of what the government expects to buy with the money in the form of personal services, supplies, vehicles and other equipment, etc. It seems to me that this approach represents a major improvement in budgeting concepts, and will facilitate legislative policy decisions and effective administrative execution.

NEW TYPES OF MANAGEMENT PROBLEMS

Finally, I want to review briefly some more general management problems which arise out of or accom-

pany the growing governmental interest in natural resources. These could be listed in great detail, but I wish only to refer to some of the more significant. One of these is the impact which geography or space has upon administration. With many of the traditional governmental programmes, equity is achieved when these programmes are carried on uniformly throughout the nation. Uniformity of treatment coincides with equality of treatment. But this easy rule does not apply to many resources programmes for the resources are not distributed uniformly across the face of the earth. Water must be developed where it is available for development; minerals where they may be found, and so on. This is, of course, the key element in what is called regionalism or regional development. In any case, a major problem of management of resources programmes is to adjust them appropriately to the needs and potentialities of parts of the country. In the United States, problems of regional organization and related decentralization have received considerable attention in recent years. As well as posing significant administrative problems, this aspect of resources administration also has serious political repercussions that I will discuss in my third lecture.

Another new type of management problem arising from governmental interests in resources is that suggested by the growing need for statistical data as a means for planning and appraising resources activities. Programme evaluation, in fact, becomes a major challenge to administration if for no other reason than that a developing economy cannot

afford the high costs of inefficiency in resources activities. (I might add, incidentally, that I have been impressed with the philosophy of programme evaluation in the Indian Government. It seems to me that the Programme Evaluation Organization in the Planning Commission and the Programme Research and Action Institute at Lucknow represent very sound attempts to deal with this problem of evaluation. I only wish that I had the time to study the actual work that these agencies are doing, for I have a feeling that their experience would be highly useful to American public administration.)

Closely related to the problem of evaluation is the job of work planning and programming. Here the challenging managerial problem is one of setting priorities among activities so that those are chosen which will contribute most to the accomplishment of overall objectives. To my knowledge, public administration is only beginning to come to grips with these types of problems, yet it seems clear that wise use of resources will require greater attention to them.

Finally, I want to mention a very important kind of management problem, and this is the relationship of public sector activities to private sector activities. This would merit a lecture in itself, and of course patterns vary from country to country. Except in the completely socialized countries, one aspect of this problem that needs more study is the field of contractual relationships between government agencies and private contractors. In the United States, for example, much of our atomic energy research and

development is carried out by private contractors. And in other resources field too, this device is used extensively. I know that here in India in some areas of development this contractual approach is utilized. Hence I suggest here is an area for fruitful research and administrative pioneering.

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I have tried in this lecture to review very briefly how it has happened that natural resources have become a major area of concern to government. I have tried to identify some of the factors and forces that converged to bring problems connected with natural resources to the fore. And finally, I have discussed very briefly the impact which this governmental interest has had upon public administration. I hope some of the ideas and concepts I have presented here will prove stimulating.

II

THE AMERICAN EXPERIENCE

IN THE FIRST LECTURE I reviewed some of the factors and forces that have made natural resources issues of growing importance to governments, and I tried to identify some of the impacts these trends have had on public administration. My interpretations reflected my American biases and experiences, even though I tried to speak in more general terms. My object in discussing today the American experience in more specific terms is to make significant and comprehensible certain distinctive aspects of American public administration in the field of natural resources.

To begin with, I need to clarify a point that was implicit in the first lecture—this concerns the relationship of natural resources to economic development. I tended to use the terms “natural resources programmes” and “economic development programmes” more or less interchangeably. Certainly natural resources programmes are major parts of economic development programmes, and what governments do with respect to natural resources contribute to economic development and growth. In India, natural resources activities are an important part of the Five Year Plans. But I also implied in my first lecture that in terms of administrative

approach there may be some value in looking at the narrower administrative problems connected with specific resources: water, soil, minerals, forests, etc. Whether this may be a sound emphasis, I will leave you to decide. In any case, it is clear that in the United States we have stressed such a particularized approach to specific resources. We have, in general, developed narrow programmes aimed at solving special resources problems. Conversely, we have never in the United States had a comprehensive plan into which the various developmental programmes could be neatly fitted. Our resources programmes, for reasons that I hope to explain, have developed on a piecemeal, narrowly focussed basis.

Partly this has been due to our philosophical or ideological hostility to national planning. But more importantly, it seems to me, it reflects a peculiar genius of American political and administrative processes. For these reasons in this lecture I want particularly to stress four points which I believe are typical of American resources administration and in some respects of American administrative processes in general. These points are :

1. The growth and development of American resources programmes has been pragmatic and pluralistic, directed to solving particular problems identified at the time a programme was instituted.
2. The growth and development of American resources programmes has been dependent

upon the leadership and zeal of individuals, usually specialists or technicians, and the support of articulate groups.

3. The growth and development of American resources programmes has been deeply involved in politics, political struggle and conflict.
4. American resources programmes have been administered by specialists and technicians, rather than by administrative generalists, and their dominant objective has been programme accomplishment.

I

All life is dependent upon natural resources. This point is too obvious to belabour. And many decisions made by governments affect natural resources, their use and development. This has been so since governments began. But as I suggested earlier, to the student of public policy, natural resources become significant at that point in time when it is felt that man through government can deliberately do something about resources and their development and use. Resources policy is a subject for study only at that point where it becomes deliberate, where governmental and political decision-makers act with the intent of affecting resources.

In the United States, this point at which resources policy began to be deliberate can be placed some time after the Civil War (1865). As with all dates, of course, there is a certain arbitrariness about being so specific about the beginning of a new policy

interest. But in any case, the exact time at which resources policies began to be deliberate is not so important as the forces and factors that converged to focus attention on such questions.

Four of these forces and factors are worthy of special mention. First, and in many respects the most important, was the public domain—that land owned by the United States which under the then current policies was being disposed of as rapidly as possible by gift and near gift. From the beginning of the nation, when the public domain lands totalled over one billion acres, the basic policy had been one of disposing of them so as to encourage rapid settlement of the continent. By the end of the Civil War, Eastern United States up to about the 98th meridian had been pretty well settled. On the western and northern fringes of this area some public lands remained, but by and large, the area was settled. Similarly, the Western states of California, Oregon and Washington were settled on the small strip that faced the sea, but their interiors were still wilderness. Thus, in general, it was the interior mountain and the Great Plains area that remained available for settlement after the Civil War. But this area posed some new problems—problems to which earlier land and settlement policies did not apply. Almost all of these new problems could be comprehended in the term aridity. This was the region of less than twenty inches of rainfall. This was the so-called “Great American Desert”. And the important point is, that settlement in semi-arid and arid regions was new to most Americans.

Those who were pushing into this still unsettled country were a humid people. Their experiences, their institutions, their knowledge stemmed from humid conditions. And herein ultimately lay one of the great challenges to resource policy, namely, to fashion new programmes, new agencies, new institutions that would fit this semi-arid and arid region.

To a large extent, as the humid portions of America were settled, first English institutions and then later American seaboard institutions were more or less automatically adapted to the needs of the newer areas. The process was accepted as valid and in general it worked. But as settlement advanced into the dry regions, it became increasingly apparent that more radical adjustments were needed. And this gave rise to a more deliberate, a more analytical approach to land policy. Lest I mislead, let me hasten to add that many and serious errors were made in the process of hammering out land policy. But it seems to me, as I read the history of land policy, that after the Civil War a new kind of issue obtruded which introduced a new dimension into the consideration of public domain questions, and this dimension was the consideration of resource-use questions.

The second factor which tended to focus public attention upon resource policies was closely related to the first one, but it is more specific. This was the so-called "disappearance of the frontier". Let me explain. For many years at each decennial census, the Census Bureau had been publishing a frontier line on a map of the United States, even as today

it still locates the "population center" of the United States. The frontier line was a statistically determined line running from the Canadian border to Mexico or the Gulf of Mexico. East of this line population densities were more than two persons per square mile, and west of the line densities were less than two per square mile.

But by 1890 it was no longer possible to draw such a line. To some people, including the great American frontier historian, Frederick Jackson Turner, the disappearance of the frontier line meant the end of free land. And some even went so far as to wonder whether the continent with a population at the turn of the Century of about 70 million was becoming filled up and this view contributed to the pressure for restricting immigration into the U.S. Actually, the disappearance of the frontier line meant that while there were still millions of acres of public domain lands, there were so many islands of settlement that it was just not statistically possible to draw the frontier line. But in any case, the disappearance of the line served to call attention to settlement and land policies, and thus added to the forces leading to the development of policies which took greater account of resource problems and potentialities.

This orientation was encouraged by the third factor which I mentioned in the first lecture, namely, a Malthusian fear that population was on the verge of outrunning food supply. In the United States, this fear was encouraged by several phenomena. One of these was the abandonment of farms in the

Eastern states, especially in New England and New York. From this it was wrongly concluded that American farm lands were wearing out. Actually, of course, better transport opened up the more fertile Middle West to Eastern markets and the local farms could not stand the competition. But also relevant was the widely held view, to which I referred earlier, that increases in agricultural production could only be secured through bringing in of new acres, and as the available acres declined, it seemed inevitable that increasing population could ultimately not be fed. There just would not be enough acres, so it was thought.

One other Malthusian type fear was also quite prevalent at this time, namely, a fear about the supply of timber. Before white man came to America, 800 or 900 million acres had been in timber. As settlement advanced, and especially as it became more dense and urbanized, these primeval forests were cut down for farms and cities. And after the Civil War a growing number of people were expressing their fears that the country would soon be without a timber supply. In this case, too, the fears now appear to have been overstated. But from the point of view of policy development this fear of a timber shortage was an important factor in the growing pressures for deliberate resource-oriented public policies.

Finally, the fourth factor that pushed* resources policy in the direction of greater deliberateness, and one might say even rationality, was the growth of science, the application of the scientific method to

problem solving, and the development of a scientific bureaucracy in the Federal government. To us, as public administrators, it is the latter development which is of special interest.

A leading example of the importance of the bureaucracy in shaping and redirecting public policy towards resources is the work of the pioneering U.S. Geological Survey. This agency, created in 1879, can in many respects be considered the primary instigator of American resources policies and programmes. And the patterns of operation it established still typify our approach to natural resources.

An entire series of lectures might be based on this agency, for its role both in raising and in resolving resources issues was tremendous. But I merely have time to refer to a few of the things this bureau accomplished and to describe briefly how it approached resource questions. To begin with, it is noteworthy that the Geological Survey was led for 15 years (from 1879 on) by a dynamic and outstanding geologist, John Wesley Powell. Although largely self-trained, Powell's influence on American and on world geology was considerable. More significantly, perhaps, he combined great administrative skill with a unique ability to secure from the national legislature support for his work. In this connection, like many successful American bureaucrats after him, he became involved in politics himself, and ultimately, as a result of a bitter controversy with certain members of the Congress, resigned from the Geological Survey. But not until

he had made a tremendous imprint on the nation's approach to natural resources.

As its name suggests, the Geological Survey undertook the topographic and geologic mapping of the nation, and in this process did much to shape the science of geology itself. In this way it provided much of the basic data so necessary for mineral and water development. In the course of its survey of Western states, the Geological Survey highlighted the problems of aridity. Powell, himself, did much to destroy the popular myth that with settlement the arid lands would become more humid. And ultimately, out of the work of the Geological Survey grew the interest of the Federal Government in irrigation development. It is interesting in looking back to this period to find that the dominant interest in irrigation in the United States was not food production but land settlement—to provide farm homes for what was thought to be an endless wave of settlers. These interests crystallized in the Reclamation Act of 1902 which is still the charter for irrigation work in the United States.

Several points in connection with the beginning of government irrigation development are worth mentioning. One is the dominant role of a government bureau in programme and policy formulation. Another is the importance which individual technicians played in this development. Powell, in the growth of the Geological Survey itself, as well as in the formulation of irrigation policy, and after Powell left the Survey, Frederick Newell, a Powell

trained engineer, in formulating the Reclamation Act, and after its passage, in administering it. Still another significant aspect of the American irrigation story at the turn of the Century is the record of acrid political debate and personal controversy which preceded the enactment of the 1902 statute. It was this controversy, incidentally, which led to Powell's resignation as head of the Geological Survey. And it might be noted that similar disputes have marked the path of policy formulation in the natural resources field ever since. On this phenomenon of American political processes I will comment in my final lecture. At this point I want merely to suggest that in many respects these controversies were curious because they did not deal with the over-all policy issues of whether land should be irrigated, national needs for irrigated land, the relation of irrigated land to the economy generally, but rather with a number of very specific points which were of interest to particular politicians or particular localities or particular groups. Political support for the Reclamation programme was based upon pragmatic alliances and alignments—not positions of principle. And the resulting statute was really quite vague in defining operational policies, so that the irrigation programme was hammered out year by year by the personnel of the Reclamation Service. Again, I would stress that in the American system, programme and policy development in large measure falls to the bureaucracy.

Let me turn to one other early example of resources

policy development. As I have already suggested, a concern for American timber supply began to be expressed in the 1870's. In the 1890's the first steps were taken to establish our national forests which now include about 160 million acres, roughly half of which has commercial potential. But our basic forest policy was formulated in the first decade of this Century under the leadership of Gifford Pinchot, during the Presidency of Theodore Roosevelt. As "chief bureaucrat" in charge of government forestry work from 1899 to 1909 (when he was discharged by President Taft), Pinchot had an unprecedented opportunity to shape national policy and also to build one of our outstanding resource agencies, the US Forest Service.

Pinchot was an intimate friend of President Roosevelt, and the interests of these two leaders crystallized into what has since been known as the Conservation Movement. In a sense this movement culminated in the 1908 White House Governors Conference, which brought together most of the state governors (for the first time) and many other state and federal political leaders. At the Conference, a series of papers on American resource problems was presented, and an attempt was made to gain support for a concerted and multi-purpose approach to resource development. The Conference, in retrospect, was a significant propaganda gambit seeking to stimulate greater concern and awareness of resource issues. It might also be noted, however, that Pinchot and Roosevelt also had in mind a political manoeuvre which might help to

secure bureaucratic interests against the possible ill effects of the presidential elections of 1908.

In any case, it is noteworthy that the Conference was an executive branch show; it was entirely engineered by bureaucrats in order to "sell" their analysis of the resource situation. Equally noteworthy is the fact that although the 1908 Conference sought to present an integrated view of resource problems, it was almost completely unsuccessful in persuading the attending politicians to follow this approach. And resource development in the United States continued to advance on a piecemeal, particularized basis.

To summarize, the period from about 1890 to 1910 saw the beginning of an active government interest in natural resources. Although efforts were made during this period to develop an integrated and comprehensive approach, these were unsuccessful, and government resource programmes continued to be formulated in very specific, problem-oriented terms. A rather varied number of programmes were underway by 1910, and for the next 23 years continued on their own way without much change.

But it is worth noting that aside from the significance of these various programmes for the particular resources with which they dealt—water, minerals, forests, etc.—they had an additional significance that was not often recognized at the time. This was that these programmes, in fact, marked the end of *laissez faire* in America. Through the emphasis on protecting and developing particular

resources, the door was opened for government intervention at the foundations of the industrial economy. And this occurred not on the basis of economic theories or concepts, but in terms of technological problems and sometimes rather sentimental or selfish interests.

II

The period between the two Roosevelts was, in contrast to the earlier period, one of considerable stability in government resources activity. It was, in a sense, a period of consolidation, although some of the seeds for later developments were sown, in the World War I experience, for example. But the Great Depression which followed the 1929 crash again brought resource issues to the fore—this time in their stark economic dimensions. In the New Deal period many new resource activities were undertaken by government, and many old activities were expanded. Many of these events are significant, but I have time to discuss only two of them—and these much too briefly.

First, I want to comment on the Tennessee Valley Authority with which I was associated for seven years, and which is well known in India.

To many Americans TVA is a crowning achievement of the New Deal. To others, TVA has symbolized something foreign to the American system and is castigated as "creeping socialism". To many foreign visitors TVA has represented an impressive and successful effort to organize the forces of nature

for the benefit of man in a democratic context. As a result, river development schemes all over the world have in one way or another been modelled after TVA—even India's own Damodar Valley Corporation owes a part of its conception to the TVA idea.

I am not going to examine the pros and cons of the TVA controversy, which after 25 years is still going strong in the United States. But I do want to suggest certain aspects of the TVA experience which illustrate the way in which we tend to approach resource policies in the United States.

You may not realize, for instance, that the original impetus for the TVA development came not from a well thought-out conception of resource development, nor from a desire to improve the economy of an underdeveloped section of the nation, nor even from a narrow interest in building navigation and flood control works in the Tennessee River. This latter concern ultimately became important, and it has provided the stimulus for many of our river development projects of more recent years. But the original impetus to the TVA development lay in the need for munitions nitrates during World War I. It was this need which led the Government to build an industrial establishment on the Tennessee River at Muscle Shoals, Alabama. This site was chosen primarily because here was one of the best undeveloped hydro-electric sites and a great deal of electric power was needed for the then feasible synthetic nitrate processes. The war ended before Muscle Shoals produced any nitrates. But a good

start had been made on what was to become Wilson Dam. With the end of the war, however, the Government did not know what to do with the Muscle Shoals industrial complex.

From 1919 to 1933 the Congress investigated, discussed and debated what to do with the Muscle Shoals facilities. During these years of debate Senator George W. Norris, after whom Norris Dam is named, made various proposals for public operation of the Shoals chemical facilities and for the distribution of Wilson Dam power. Through the years his ideas developed and ultimately in 1928 and again in 1931 Congress passed the Norris measure for public operation, only to receive Presidential vetoes on both occasions.

When Franklin D. Roosevelt became President in 1933 the enactment of the Norris proposal was assured. And it was President Roosevelt who added to the TVA idea the conception of regional planning and development. But fortunately or unfortunately his views on this subject were incorporated in two rather weak sections of the TVA Act (Sections 21 and 22), the balance of the statute being essentially the earlier Norris proposals.

When TVA was organized America was in the midst of the Great Depression. There was at that time considerable disillusionment and skepticism with respect to the effectiveness of the market and a free economy to allocate resources on a sound and rational basis. Thus many were talking about the need for governmental planning. And it was in this mood that glowing statements were made

concerning what TVA would accomplish in re-planning the Tennessee Valley region. Chief among those envisioning the remaking of America was the original TVA Board Chairman, Arthur E. Morgan. But it was not long before he realized (having probably been helped to this realization by TVA lawyers) that the statute was quite limited with respect to planning and economic development authority. Primarily, the Act authorized a number of specific and somewhat related activities in the fields of navigation, flood control, power and fertilizer production.

It is a tribute to those responsible for the administration of TVA that it was possible to so use these specific powers as to have a maximum effect upon development of the region. To illustrate, TVA had no specific authority to develop library facilities in the region. Yet it was possible to give a stimulus to rural libraries, because in providing library services for its employees as a matter of good labour relations, TVA contracted with local governments in the region for these services and thus encouraged them ultimately to expand their services and facilities in this regard.

In a somewhat similar fashion the responsibilities for fertilizer research were interpreted so as to form the basis for a regional agricultural programme.

But the fundamental deficiencies of the TVA Act with respect to regional planning and development generally were never corrected. And this would probably have been politically infeasible. But as a result, as the political climate in America became

more conservative, TVA's role in the field of regional planning and development shrank and it became more and more an operating agency generating electric power, providing navigation and flood control, carrying on fertilizer research, and doing only a few very modest developmental activities. The point is that in rather typical American fashion the details of programme-content had been left to administrators, and in the absence of clear-cut policy commitments from the Congress, it was to be expected that such administrative policies would be eroded away by the pressure of changing political attitudes.

This shift in TVA's orientation in recent years has often come as quite a shock to foreign visitors who still think of TVA in planning and regional development terms. Two such—one from Norway and one from Israel—discussed their disappointment with me some years ago. And it was only after I explained to them some of the peculiar aspects of American administrative processes that they understood the cycles through which TVA has gone. I should stress that TVA is still an outstanding river development agency, a well administered example of a government enterprise, even though its goals have been narrowed considerably.

III

The other New Deal experience that I want to mention as illustrating the American approach to natural resources and American attitudes with

respect to the government's role in resource development is that of the National Resources Planning Board. This agency, under various quite similar names, existed for about ten years. It was born out of the depression disillusionment with an unplanned economy to which I have already alluded. And its mission was to plan and coordinate national economic development, especially public works programmes. And it sought to introduce a degree of calculation and rationality into development decision-making.

In attempting its assignment the NRPB ran into many difficulties, some of which are not unfamiliar to India in its planning effort. There was a lack of data for planning; the techniques for planning were largely undeveloped; and the agency lacked planning experience. Equally important, the basic planning policies were not clear; the goals to be sought, uncertain. There was in the work of the NRPB often an assumption that the facts would speak for themselves. At the same time there was a failure to recognize that the real issues of planning are not whether there should or should not be a plan, but rather who shall plan and to what ends. And it was the twin questions of *who* and *what ends* that proved ultimately to be the nemesis of this pioneering effort in American national planning.

To use but one oversimplified example: The Planning Board hoped to develop America's water resources on a basis that made objective economic sense. But the Congress, supported by powerful interest groups, preferred the traditional basis for

deciding river development schemes which made political sense if not always economic sense. And as I will suggest in the third lecture, in a democracy in which the representatives are chosen on a geographic basis, each one rather naturally seeks benefits for his own district or state—both because here is where his heart is and because it is useful to him when he stands for re-election. Nor is it necessarily true that economic values are the higher values in a situation of this sort, although clearly resource development as a concept has strong economic biases. In America, this tendency to seek benefits for the home district is accentuated by the nature of our political parties which are not generally issue-oriented and thus exercise little restraint on the legislators.

But to conclude my comments with respect to the NRPB, as planning was generally not politically acceptable, the agency found itself more and more becoming a kind of research bureau, rather than a dynamic force in programme administration. It performed well in this role, but its abolition in 1942 created few operating problems, for by that time it exerted little influence on day-to-day administration.

The years of World War II, of course, created numerous problems in natural resources administration, but time requires me to move on to comment briefly on the general trend of post-war developments. In the post-war period, one dominant fact has been that the economy has been operating at nearly full capacity. Partly for this reason, there has been little expansion in governmental

resource programmes, except those directly related to defence activity. What government is doing in the resources field remains about the same as before the war. Again as in the two decades after 1910 the period is one of considerable stability.

IV

One field that is something of an exception is that of water development. Here, for reasons that do not always make planners and economic analysts happy, we have been steadily building an assortment of river control works—for flood control, for navigation, for irrigation, and somewhat incidentally for power generation. There has, in this connection, been a great deal of talk about the river basin approach to water development, but no new river basin agencies (modelled after TVA) have been set up, and that which is labelled a river basin approach is on a very narrow engineering basis and not on an economic development basis. Many of the decisions concerning river development have been made in political terms—to do something for this district, state or region, and not in any broad, rational planning frame of reference. Whether at some future date we may regret the frequent lack of economic rigour in the justification of too many of our water projects remains to be seen. But certainly it is not an exaggeration to say, that since the war, our approach to water development has suffered from a failure to apply comprehensive water policies.

This point was made very clearly in a monumental report by the President's Water Policy Commission issued in 1950. And little that has happened since then has materially changed the picture. We have been struggling to develop such policies, but the forces running counter to this effort have been the stronger.

Finally, I want to refer to another Presidential Commission report—that of the President's Materials Policy Commission, or the Paley Commission as it was popularly called after its chairman. As its name suggests, this Commission dealt with the basis of the American economy. While it presented the staggering figures of American resource consumption, its overall tone was, in my judgment, optimistic. It expressed considerable faith in technology as providing the answers to resource depletion. And equally important, it reflected a renewed faith in the market mechanism for stimulating needed resource development and effecting reasonable resource allocations. While it did not deny that government had an important role to play in the resources economy, it certainly did not propose any expansion of governmental activities.

Other post-war developments could be mentioned—atomic energy, oil development stimulated by special tax benefits, the expansion of tree farming primarily for pulp wood purposes in the South—these and many others would be interesting, but time precludes my dealing with them.

III

THE POLITICAL BACKGROUND OF RESOURCES ADMINISTRATION

TODAY I want to talk about the politics of natural resources. And this is by far my most difficult assignment. Its difficulty arises from the fact that I want to talk in general terms, yet the experiences, observations, and researches from which I am generalizing have been largely American. For this reason I would like to suggest that you regard much of what I have to say as a set of tentative hypotheses. As such, it is my hope that they may prove stimulating, and that they may suggest questions for research and analysis with respect to your own political processes and their relationship to administration.

In dealing with this subject I want first to consider some general aspects of politics and political processes and how these relate to administration. Then on this foundation I want to examine particularly certain aspects of resources politics.

One of the conventions of political science is, whenever possible, to refer to Aristotle, the patron saint of the discipline. In conforming to this convention, I want to remind you of Aristotle's comment to the effect that all men are by nature political. By this he meant merely to suggest that men live in societies and societies require governance. Aris-

tote's politics thus was concerned with systems of government. And political science ever since has tended to focus on the machinery and structure of government. In the Nineteenth Century, as constitutional democratic government was adopted in many nations, constitutional questions, couched in legalistic terms, attracted a great deal of attention from those who were interested in political science, because these were the pressing problems of the period. I suspect similar reasons have led Indian political science to be concerned with constitutional principles and structural relationships between the states and among the several parts of the government.

Since in America our written Constitution is also so very important, and since we too have a federal system, our political science has had a comparable orientation. Constitutional principles, federal or inter-governmental relationships—these have been the staples of American political science. With this kind of an emphasis, incidentally, political science tended to be descriptive, historical, and legalistic.

But in the last several decades, American political science has been shifting its focus. Or perhaps a better way to describe the situation is to say that political science has broadened its base to include elements not usually a part of the more traditional approach. These newer developments cannot be simply characterized, and it would take me too far afield to attempt to do so. But perhaps it is not inaccurate to say that the stress is currently on the

political and administrative *process*, on the way in which governmental-political *decisions* are made, and on the factors and forces relevant to those decisions.

Process and *decision-making* are thus two important concepts in present-day American political science and public administration. In this approach, political science draws heavily on sociology and social psychology, both for concepts and for methodology. And it is currently popular in some circles to speak of political science as one of the "Behavioral Sciences", and to concentrate on political behaviour as the most significant segment of the political science spectrum.

I would be misleading you if you were to conclude from my remarks that these newer trends represent a neat package of consistent political theory, tied together in a single, monolithic system. In fact, political science and public administration in America are in intellectual ferment. And what I am trying to do is to identify some of the concepts and ideas currently being talked about, which appear to me to be useful in considering the political background of natural resources administration.

Perhaps the idea of the political process is effectively suggested by the provocative title of Harold Lasswell's book of some twenty years ago : *Politics : Who Gets What, When, Where, How*. In his view, politics is dynamic. Its interests are with action, with getting, with decisions. Its function is vital to society for it is concerned with the distribution or allocation of costs

and of benefits—social as well as economic. Politics is more than simply voting or party activity, although these are clearly important aspects of the political process. In short, the political process includes a complex range of activities by which public-governmental decisions are made—decisions advantaging some and disadvantaging others. Implicit in this view is a recognition of the many forces and factors that influence and shape the direction and content of governmental decisions. Values, beliefs, ideas, myths, hopes, disappointments, fears—all are a part of the context within which governmental decisions are made. It is the interaction among these forces and factors that is at the heart of the political process. The issues themselves, the manner in which they are drawn, the participants, their aspirations and expectations, together with the structure, mechanisms, procedures and techniques of government are all relevant to the working of the political process.

The mere listing of the many influences affecting the political process and shaping government decisions suggests the limitations of the traditional dichotomy between politics and policy on the one hand, and administration on the other. To be sure, grand policies may be voiced in the legislature on the basis of formal party positions, but it is a rare case where these climax decisions do not have roots that go deeply into the heart of the bureaucracy. In fact, most policies, however formally they may be announced, reflect the accretion of many small decisions in the day-to-day work of the bureaucracy.

Perhaps the problem to which the policy is directed was first identified by bureaucrats. And this function itself can shape the direction of policy, for he who determines the agenda, plays a major role in guiding the decisions. Perhaps the research on which policy is based was performed by the bureaucracy. Because of its expertise, because of its experience, because of its numbers, the bureaucracy today plays a crucial role in most programme and policy decisions.

If this is recognized, then, it seems to me, it follows that those who stand to gain or lose from particular policies will seek to influence governmental decisions wherever these are made. And the bureaucracy is not immune from such efforts, though the techniques of influence will vary from those applied to a political party or a legislature.

The decision-making situation I have thus described is characterized by multiple or plural points of decision throughout the government structure, and a major aspect of the political process is the struggle for access to these points of decisions.

I

Before I go further, it is necessary that I say something about reason and rationality in relation to the political process. Eighteenth Century democratic political theory, which was the well-spring for most present-day democracy, placed great emphasis upon rationality. It was assumed that as the public became better educated, more democracy would

be feasible, and wiser decisions would result. In this "Age of Reason", moreover, it was believed that government and public administration should be the application of right reason to the problems of the day. And the result, it was assumed, would inevitably be *right* decisions. The concept that there might be alternative decisions, the possibility that "rightness" might be indeterminable, the idea that "rightness" was a function of individually-held value premises, did not receive much attention in this logical age. For this reason, the role of political parties was not perceived, for the idea of two or more policies and programmes, all equally sound was clearly untenable. Even James Madison, the great American realist, who recognized long before Marx that those who hold property and those who do not ever fall into opposing classes, nevertheless hoped to set up a system of government in which right decisions would be made. Since these halcyon days when democracy was regarded as inevitable because it was right, we have become less sanguine, even when we prefer democracy with all our hearts. For one thing, our psychology and social psychology have advanced to the point where we know a little more about what makes people act. We know the role that concepts of self-interest play, and the extent to which human action—even yours and mine—includes a host of emotional and non-rational elements shaped by our life experiences. The Freudians, I am told, even seek to include pre-natal influences in the range of those which make us what we are.

As a result of these intellectual developments, we are far less positive about the goodness or badness of particular programmes and policies. Instead we are far more inclined to say—let me know your premises, the inarticulate as well as the articulate, let me understand the action context, and I will try to determine whether the means you have chosen will contribute to the ends you seek.

To some, this approach to democracy is disheartening, for they pessimistically see in it a kind of nihilism, the ultimate rule of the mob, complete irrationality. To others, and I am one of these, it has in it a realism that is needed to understand a democratic system and to make it work. So let me pursue the consequences of the analysis I am suggesting a bit farther.

One important consequence is that it leads to a recognition of the pluralistic character of democratic society. Except in a very few instances, we do not all hold the same values; we do not seek the same goals. And even where a high degree of unanimity may prevail, the priorities which each of us set on particular goal accomplishment will vary widely. On the one hand, political activity in a democracy will reflect this diversity. But on the other hand, a principal purpose of the political system is the choosing of goals, the reconciling of conflicts, and the compromising of differences. The task of the political process is to pick from a range of possible activities, and to determine priorities among them. The political process, in this view, provides an institutionalized mechanism in which

conflicting values, differing opinions, separate goals, can be brought into interaction so that decisions can be made which are as consequent as the circumstances permit. This does not mean that everyone gets what he wants. But it does tend to mean that the diverse wants of society and of the individuals that make it up are in some fashion considered. And since I am talking about a democratic society, the opportunity always exists, in theory at least, for dissidents to organize to change governmental decisions.

II

From the view of the political process which I have thus briefly sketched emerge a number of corollaries to which I want to turn.

The first of these concerns the role of conflict or struggle in the political process. There are those who consider that the most satisfactory society is one in which disagreement, dispute, conflict and struggle is eliminated. Yet until gods govern men, such a society is an idle dream. In fact, when one recognizes the plural goals sought by different individuals and groups within a society, when one accepts the varied value premises from which people and groups act, and when one notes the paucity of knowledge and the large element of assumption in public decisions, one is forced to acknowledge that conflict is a normal situation in democratic societies. The problem of democratic government, then, is not one of establishing uniformity and symmetry,

for to do this violates basic democratic tenets of self-realization, tolerance, and the free trade of ideas. On the contrary, the challenge to a democratic society is to institutionalize or channelize conflict and struggle so that it serves the purpose of wiser decisions. This we must seek to do—not only for the sake of toleration, but more importantly because in the process of conflict and struggle a basis for viable decisions becomes clearer.

Such institutionalization has, in fact, been developed in the case of political party activity, and in a very special sense it is at the heart of most systems of litigation and adjudication. But the political struggle which I am describing is broader than simply party activity, because in modern government there are many points at which crucial decisions are made, in addition to those associated with the legislative bodies where party activity tends to concentrate. What must be realized is that increasingly, as government becomes more specialized and complex, the struggle is for favourable decisions at these non-party, non-legislative points in the political-governmental structure.

In many instances, perhaps, the struggle for access to and favourable decisions from positions of power in the governmental structure may be likened to the situation at a bus stop during the rush hour. Each person is intent on gaining a seat. Yet only a few will get seats. Some will have to stand, and still others may not get in at all. In the struggle, there is some pushing and shoving, but generally those who stand, or those who are left behind do

not bear a grudge against those who secured a seat. Perhaps this is something like the interaction which occurs in a democratic society in the political process. To be sure, violence does on occasions break out. But this is clearly not the rule. And yet short of violence, conflict, competition, struggle is an important part of democratic political processes.

III

To further clarify my meaning, let me proceed to my second corollary, namely, that *groups* of various kinds are principal participants in the political process, that group activity is typical of the political struggle.

In talking about the role of groups in the political process, I will be generalizing particularly from American experience, although I suspect that a great deal of group theory, with appropriate variations, would also apply to India and to other democratic countries. At the same time, the proliferation of groups is an American phenomenon already noticed by Alexis de Tocqueville over 100 years ago. The literature of social psychology has analyzed the nature of group structure, has characterized group activities, and has considered problems of group interaction in great detail. Much of this literature is of value in approaching the group basis of politics.

For present purposes, however, I want to define the term "group" as simply a convenient designation for a number of individuals acting together for more

or less agreed upon purposes having some relation to government. In this usage the term "group" might be applied to a wide range of private organizations—business, social, religious, labour, etc. It might also apply to political parties and to factions within them. It could apply, too, to government agencies, the group character emerging from the fact of agreement of particular purposes among the individuals involved. Group theorists also speak of *formal* and *informal* groups, and suggest that for analytical purposes *potential* groups may be as important as *actual* groups.

To speak of groups in the political process is merely a useful way to take into account the fact that in most cases today political action requires organization, for the single individual rarely can be effective in our complex, populous societies.

Insofar as we are talking about groups in relation to government, it is apparent that those groups are significant which are seeking something from government, or are seeking to shape government to their views, or otherwise are after influence or power. It is in this context, as I have already suggested, that the centres of power and of decision-making in government become tremendously important. They are, in fact, the foci of group activity.

In the American system these centres of power and decision-making are highly dispersed and diffused because of our federal system, because of our rather rigid separation between the executive and legislative branches of government, and because of the nature of our party system. The latter factor is perhaps

least well known and deserves a word of comment. Two aspects of our party system distinguish it from that of India and other parliamentary democracies. One is the fact that in general our parties are not issue-oriented; they do not have specific and detailed programmes on the basis of which they seek election. As a result, legislators are more or less free to vote as their judgment tells them to vote, and are not held in line by party positions. In other words, most votes in the American Congress and the state legislatures are what you here in India call "free votes". The other feature of our parties that is relevant here is their high degree of decentralization. The heart of our party system is the local unit. Here lies the power and here the responsibility. As a result, our state and national parties are really loose federations. Because American parties thus do not as parties develop detailed programmes and policies, the bureaucracy is forced to play a very large role in programme and policy determination. And concomitantly, the centres of decision-making are even more widely scattered throughout the executive branch than might be the case were our party system different.

Another result is that programmes and policies are often narrow in forms and of quite limited scope because the bureaucracy rarely can take great risks. Policies may even be inconsistent one with another for we have inadequate mechanisms for coordination and integration.

You will note that I mentioned before that the

bureaucracy itself was a part of the group structure. This arises out of the obvious professional and clientele relationships which present-day bureaucracies inevitably develop. And of course it highlights why access to the bureaucracy is one of the goals of group activity.

Finally, I want to examine what happens to the public interest if the political process is as I have described it.

As I had indicated earlier in this lecture, 18th and 19th Century democratic theory proceeded on the assumption that the public interest could be determined rationally by men of goodwill. The public interest was something that could be objectively determined, and if we just knew enough, the correct answers would be forthcoming. But in recent times, the recognition of the plural character of goals in a democratic society, the emphasis on the relative nature of values, and the obvious tendency of people to equate the public interest with their own interests—all have contributed to a rejection of the very idea of the public interest. The result has been disturbing to many of the values which we have tended to assume were key elements of democracy.

In my own thinking, the concept of the public interest still has validity. But its validity arises not from any objective definition, for I do not think one can determine with finality that this action will clearly be in the public interest and that one will not be. In hind-sight, it may often be possible to appraise the consequences of past action and this

has its values. But in any case, it seems to me, that the usefulness of the concept of the public interest lies in the *search* for it—in the requirement that governmental actions must be rationalized in terms of their consequences and impacts upon society and the economy. In an open democratic society these rationalizations are subject to criticism, analysis and verification. And as our techniques for measurement and quantification improve, those claims which especially relate to the economic advantages of a particular programme or policy are to some extent subject to cross-check and verification. What I am saying is that the political process itself gives meaning and validity to the idea of the public interest. To me, it is comparable to the idea of “reasonableness” in law, or even like the idea of “justice”. Attempts to define justice in abstract terms are bound to fail. Yet in a viable society, we feel that our courts do achieve a kind of justice case by case. No one would assert, of course, that the judicial system always achieves justice. Yet few will deny that the objective of the judicial system is to strive to approximate justice. It is this search for justice that makes the system work tolerably well. In a similar fashion, it seems to me, the political and administrative processes in a democracy strive to secure the public interest, and it is the striving that is significant, rather than an abstract definition of what the public interest is.

IV

I have talked at some length about political theory and the political process because these views are crucial to an understanding of the political background of natural resources administration to which I want now to turn more specifically.

It seems quite obvious that programmes and policies in the field of natural resources are deeply involved in politics and the political process. Decisions to develop or not to develop particular resources can vitally affect a national economy and many interests within that economy. Hence, it may be expected that group activity with respect to resource decisions will be intense. The stakes are large; the interests vital.

In America we are quite well aware of the importance of group interests and group activity relative to resource policy. Such groups range from the public-spirited who seek to preserve the scenic values of some natural beauty spot, to self-seeking business interests desiring special government concessions. These groups include a wide range of specialized bureaus and agencies of government, local interests wanting government aid or seeking government economic benefits, and a host of combinations in between. As a result, the struggle for access to points in the governmental system where resources decisions are made goes on apace.

I would suspect that a similar activity, though perhaps not so intense, goes on in most democratic countries. At the same time, where a strong party

system exists, the struggle may not be quite so apparent. But certainly labouring groups who will benefit from increased employment, merchants who will have new markets, bureaucrats whose opportunities will expand—these and many other groups have interests in particular development schemes and use such power and influence as they possess to secure decisions favourable to their views.

As I indicated in my first lecture, one of the really difficult interests to deal with in a democracy is the geographic or spatial interest. Because so many resources are found at particular locations and can be economically developed only at particular locations, the politics of space is an important element of resource administration. Such questions as the following become embarrassingly relevant: Will this state, this region, or this district be benefited more than some others? Should it be? Why cannot governmental development expenditures be spread about equally throughout the country? Or, on the opposite horn of the dilemma, why should not government development expenditures be made where they will give the greatest return?

It is almost inevitable that resource decisions will advantage some areas and groups. And often, at least in a relative sense, they will disadvantage others. Here is the context for political struggle, and I would submit that the political process as I have described it, is the most equitable way for resolving this kind of issues. In this connection, Bertram Gross has written that the concept of political struggle—the interaction of interests and groups—should be to the

political scientist what the concept of competition is to the economist, a way of explaining how in a system with dispersed and plural centres of decision, policy and programme action nevertheless follows generally sound lines.

This leads me to the second topic I want to mention, namely, natural resources administration and rationality in the context of the political process.

Natural resources programmes have always rested in one way or another on science and technology. Perhaps in no other policy area is so much reliance placed upon research and scientific data as a basis for decision. Resource planning is peculiarly the domain of the engineer, the scientist, the statistician, the economist. As a result, there is a tendency to regard resource decisions as being outside the realm of politics. It is not infrequent with respect to resource decisions to cite the authority of science as the justification of particular policies and to deprecate the injection of politics into the decision matrix. Yet in no other field is there greater confusion between the role of science and the role of politics. Questions, for instance, of where a dam could be built, how large it could be, and how much power it might produce, and at what cost, are technical questions in the proper domain of the technician. But the questions of when a dam should be built, how its power and water shall be used, who shall pay for the structure and how much—these and similar questions are political because they require decisions based upon values and beliefs as well as on technical data. And it is the political process.

that should generally decide this type of questions.

But what often happens is that the value judgments of the engineers or scientists masquerade as scientific certitude or else the political struggle goes on *sub-rosa* to influence the technical people in key positions. Here in special guise is the pressing issue of modern democratic government as to whether the experts should merely remain on tap or whether they will be on top. The ideal is that policy should be based upon open decisions, openly arrived at. And this means that the political process should have full play. But there are obviously strong pressures in the area of resource policy which seek to remove such decisions from politics, rationalizing the course as sound science.

In this connection, the concept of bureaucratic neutrality needs to be re-examined, for it seems clear to me that in many resource decisions those responsible may also be acting on their own inarticulate value premises, and hiding these behind the facade of neutrality. The increasingly important role of the expert in government and how to handle him is another way to state this problem.

V

Some special problems arise in connection with resources planning. By planning I mean, simply, the systematic application of analytical techniques in the identification of problems and the thoughtful and deliberate preparation of solutions. It seems to me, however, that much planning effort moves for-

ward from an inarticulate major premise that the plans are the answer. To many, the planned society represents the ultimate Platonic society in which the philosophers-cum-planners are the kings. But this attitude confuses the methods of planning with the results which can be obtained. It overlooks, too, some of the crucial limitations on planning—limitations which, in fact, emphasize the important role which the political process plays in arriving at policy and programme decisions.

Several points need to be mentioned in this connection. First, in many situations for which plans are developed, all relevant data is not available and for data the planner must substitute judgment. Even where data is ample, however, plans rest upon elaborate value premises which must not be confused with objective data. In many cases, plans being for the future, decisions must be made on an assessment of probabilities. And in this process, many variables are assumed to be constant or are ignored. Often secondary or side effects are not or cannot be considered. The planner, in short, is acting under conditions of uncertainty created in part by limitations on knowledge, in part by limitations of time, and in part by limitations of technique. Resource decisions can obviously be improved by use of the best techniques of planning—by rational calculation and logical analysis. But planning should never be confused with certitude. Hence the importance of the political process in arriving at fundamental decisions.

Part of the difficulty in this area arises from the

fact that planning techniques are often complex and sophisticated so that the layman is lost or confused. One consequence of this is that the value premises underlying resource plans may be largely submerged in the total plan. And while economists and other technicians may be able to identify plan assumptions, the layman is often at a complete loss, especially since he has no way of knowing the alternatives that may or may not have been considered.

The political nature of resource planning is perhaps highlighted by the fact that plans deal with the future and hence often rest upon elaborate assumptions with respect to variables which are not planned for. Again the point is not that planning should be abandoned, but that crucial questions for society are, who plans and to what ends. To put it another way, it is important to recognize the political nature of plan-decisions and to be aware of the political activity that is likely to focus upon the points where plan decisions are made. It is not that political activity is undesirable. On the contrary it is essential to sound democratic decision.

VI

Finally, I want to refer to the place which myths and symbols have in the administration of natural resources.

Once we recognize the limits of rationality in government, then we are in a position to analyze the myths and symbols which grow up around certain governmental activities. Moreover, we can accept

these myths and symbols as important to communication and motivation. But at the same time, as administrative analysts we should be prepared to dissect the myths and symbols that affect our area of interest—in this case resources administration. Here we are almost forced to examine the experience of particular nations separately, because this topic comes very close to national culture. Nevertheless, in the brief time available to me I can perhaps suggest a few of these myths and symbol complexes, to illustrate what I have in mind.

One set of ideas that are quite universal in resources literature are associated with the terms "exhaustible, inexhaustible, and renewable" as describing certain kinds of resources. It is often suggested that the inexhaustible and renewable resources should be used before the exhaustible resources. But this classification is too simple. It tends to rest on standards of physical availability, while ignoring important questions of cost. Resource policy must answer questions of relative costs, and must consider, also, who bears the costs, and over what period of time. The quantity of mineral resources in the earth remains constant; it is the cost of recovery that varies. There is, I suspect, a considerable symbolism associated with these terms, and they can have a considerable impact on decisions.

Just one other example, the term *resource development* itself. By this term, whether applied to particular resources or to comprehensive water projects, are evoked a host of images and favourable responses, ranging from pictures of the desert bloom-

ing to industrial expansion of impressive scope. Of course, nations want to develop their resources. But the point is that the very term development often begs the questions of how much, by whom, when, at whose expense, for whose benefit, etc. It says nothing about what development means, nor how it can be achieved. The concept of development is wonderful for evoking popular support. But it has only limited usefulness in administration. As administrative analysts, we must be aware of the myths and symbols that grow up around the programmes we administer. Our object should not be to eliminate these, for this is not possible, but rather to be conscious of the role they play in the political process of decision-making.

* * *

In this my last lecture, I have tried to suggest a basis for analyzing the political process. I have tried to show how that process is vitally linked to administration. Among other things, I hope my presentation may have suggested areas for further research and investigation into the administration of resources in India. In my view, policy and administration are intimately linked together so that the student of administration must also understand the way in which the political process operates.

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